for *Aedes albopictus*. Man biting rates of 0.43—5.78 bites/man/hour were estimated for *Ae. aegypti*, while it ranged from 0.49—1.33 for *Ae. albopictus*. The most common breeding place for *Aedes* species was plastic baskets (16%, $n = 12$). More than half of the households (61%, $n = 45$) stored water in large cement tanks for their daily activities. Majority of the group (99%, $n = 74$) had a basic knowledge on dengue mosquito breeding places (97%, $n = 73$), their life cycle (95%, $n = 71$) and mode of transmission (99%, $n = 74$). Domestic waste of majority of households was carried away daily by the local authorities ($n = 69$).

Conclusion: These results suggest that a vector control program should be adopted to reduce *Aedes* population levels below dengue transmission thresholds. Discarded containers of various types were identified as potential mosquitoes breeding habitats. Therefore, community must be educated on effective vector control measures to contain the transmission levels.

doi:10.1016/j.ijid.2008.05.488

24.004

Community Factors Affecting Long Lasting Impregnated Mosquito Net Use for Malaria Control in Sri Lanka

S.D. Fernando[1,*], R.R. Abeyasinghe[2], G.N.L. Galappaththy[2], N. Gunawardena[1], L.C. Rajapakse[1]

[1] *Faculty of Medicine, University of Colombo, Colombo, Sri Lanka*
[2] *Anti Malaria Campaign, Colombo, Sri Lanka*

Introduction: The Anti Malaria Campaign has distributed approximately 300,000 Long Lasting Impregnated Nets (LLINs) to malaria endemic areas in Sri Lanka during the years 2004—2005.

Methods: A community based cross sectional survey carried out among 2467 households distributed among the three major ethnic groups of Sri Lanka, to study the perceptions and practices with regard to use of LLINs, in order to improve its use.

Results: In a majority of households the number of LLINs available was not sufficient for the number of people, although there were a small percentage of households, which had excess nets. The information and advice regarding use of LLIN at the time of net distribution differed amongst the three groups and was not consistent. Dissemination of this knowledge within the family was not observed. A linear relationship between the knowledge regarding LLINs and the practices on washing and drying of LLINs was recorded. It was noted that net shape may influence net use, with cone shaped nets being more popular.

Conclusions: Attention to increase knowledge on LLINs using behavior change communication techniques would have more effectively contributed to achieve planned outcomes. Proper use of LLINs will undoubtedly contribute to further reduction of malaria in Sri Lanka.

doi:10.1016/j.ijid.2008.05.489

Neglected Tropical Diseases: An Example of Encouraging Control in Central Africa

F. Louis*, L. Kohagne Tongue

OCEAC, Yaounde, Cameroon

Sleeping sickness (human African trypanosomiasis, HAT) is a parasitic disease due to Trypanosoma brucei gambiense in Western and Central Africa and Trypanosoma brucei rhodesiense in Eastern Africa. According to the World Health Organization (WHO), about 50 million people are exposed to the disease in 36 sub-saharan African countries. In 2001, African Heads of States launched the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC), expressing through that initiative their determination to overcome this plague which severely handicaps the continent for more than two centuries. Central Africa, including Angola, Cameroon, Central African Republic (CAR), Chad, Congo, Democratic Republic of Congo (DRC), Equatorial Guinea, and Gabon, is particularly concerned by the disease. In 2004, about 3 150 000 people were screened for HAT (95% of the screened population in the entire African continent) and 14 815 new cases diagnosed and treated (87% of all new detected cases in Africa). Despite great difficulties (lack of technical, logistical, human and financial resources), the control of the disease has been carried out since 2001 with the support of international organizations (WHO, OCEAC) and various NGOs. In 2007, all HAT foci in Central Africa were screened, and the prevalence of the disease has dramatically fallen down, mainly in DRC and Angola where the epidemics have been controlled. In Cameroon, Equatorial Guinea and Gabon, elimination of HAT as a public health problem was practically achieved. Nevertheless, the situation in some foci (Mandoul in Chad, Haut-Mbomou and Ouham in CAR) is still worrying. In these foci, as in the others, control efforts must be sustained or improved. In coming years, vector control is also an essential tool to achieve the final goal of tsetse fly and trypanosomiasis eradication, as indicated in the PATTEC.

doi:10.1016/j.ijid.2008.05.490

24.006

Insecticide Treated Nets; Use, Misuse or Disuse

S.W. Githinji*, S. Herbst, T. Kistemann

Institute for Hygiene and Public Health University of Bonn, Bonn, Germany

Introduction: Mosquito nets treated with insecticide have received a great deal of interest as an effective means of controlling the risk of Malaria. This study investigates the use of mosquito nets in a malaria endemic region in south western Kenya. Extensive free distribution of treated mosquito nets has been promoted in the area through the local health care facilities.

Methods: Patients visiting a local health care facility were randomly sampled. Home visits were done and a semi-structured questionnaire was administered followed by a detailed spot check of all the mosquito nets in the house-

hold. 95% of the households had nets. The mean number of nets per household was 2.44.

Results: Although 84% of the patients reported having slept under a net the previous night, spot check results revealed that 40% of the nets were torn and had large holes. 30% of the nets were not hanged doubting their reported use the previous night.

It was not uncommon to find unpacked new nets reserved for visitors or diverted to other uses such as table clothes, wall hanging and curtains. 87 new nets (5.3%) were still unpacked. Another 1% of nets were reported to be reserved for visitors. 147 nets (9%) were reported not in use.

Conclusion: As more and more resources continue to be directed towards social marketing of mosquito nets, there is need to find out how the nets are being used and develop ways of increasing their efficient use.

doi:10.1016/j.ijid.2008.05.491

24.007

Low Access to Insecticide Treated Bednets by Non-Pregnant Rural Adolescent Girls in a Malarious Area

G. Kalanda Chapotera[1,*], G. Malenga[2], F.S. Noah[3], B. Faragher[1], B.J. Brabin[1]

[1] *Child and Reproductive Health Group, Liverpool School of Tropical Medicine, Liverpool, United Kingdom*
[2] *College of Medicine, University of Malawi, Blantyre, Malawi*
[3] *St. Montfort Hospital, Nchalo, Chikwawa, Malawi*

Introduction: In malarious areas, insecticide teated bed nets (ITNs) are estimated to provide protective efficacy for mortality in children of 17%.[1] Low ITN adherence is linked to high external temperatures with increased use in those with higher income and better education.[2] Little information is available on malaria or the use of ITNs in adolescent girls.

Objective: To determine the access and utilisation of ITNs for malaria prevention in rural adolescent girls in Malawi.

Methods: Two community-based cross-sectional surveys were conducted during the dry (September—December 2005) and wet seasons (January—June 2006) in Chikwawa, rural southern Malawi. This area has high malaria transmission area. Single-stage cluster sampling was used. Information on availability and utilisation of ITNs was obtained by questionnaire. Malaria parasite prevalence was determined using Paracheck rapid test. Data was analysed in Stata 8.0.

Results: Participants were assessed in dry ($n = 477$) and wet ($n = 804$) seasons. Mean age was 13.1 ± 2.7 years. Malaria prevalence was 11.5% (dry) and 18.8% (wet), ($p = 0.001$). Overall 81% of households owned at least one ITN but only 46.6% of non-pregnant adolescents had access to an ITN, with no seasonal differences. Among those with access, average household ownership was 2.4 ± 1.0 ITNs. Participants slept an average 2.6 ± 1.9 nights/week under an ITN in the dry season increasing to 4.9 ± 2.2 nights in the wet season ($p < 0.001$). Hot weather was often cited as the reason for non-use.

Conclusion: Adolescent girls have low access and moderate utilisation of ITNs in rural southern Malawi. This risk group has significant exposure to malaria and should be targeted with improved services.

References

1. Lengeler. Cochrane Database SystRev. 2000;CD000363.
2. Alaii, et al. *Am J Trop Med Hyg* 2003;**68**(4 Suppl):137—41.

doi:10.1016/j.ijid.2008.05.492

24.008

An Entomological Study to Plan Intervention for Prevention of Dengue in Gampaha District, Sri Lanka

W. Abeyewickreme[1], H.A.D.C. Hapangama[2,*], I. Weerasinghe[3], M.D. Hapugoda[2], Y.I.N. Silva Gunawardene[2], N.K. Gunawardena[1], A.R. Wickramasinghe[4]

[1] *Department of Parasitology, Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka*
[2] *Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka*
[3] *Department of Entomology, Medical Research Institution, Colombo 8, Sri Lanka*
[4] *Department of Public Health, Dean/Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka*

Background: Dengue is the most common and fastest spreading human arbo-viral disease worldwide. Most control efforts are based not on insecticides but on suppression of vectors by reducing the number of larval breeding habitats.

Methods: Total of 2000 houses in the District of Gampaha in the Western Province which had the second highest transmission of dengue in 2006 was selected using grid sampling technique, based on disease incidences during 2003—2006. Mosquito surveillance was carried out from 0900 hrs to 1400 hrs during June-August, 2007. Larval and pupal surveillances were carried out indoors and outdoors using standard larval surveillance techniques.

Results: The House, Container and Breteau indices for *Aedes* larvae were 49.3%, 26.1% and 26.9% respectively. The common breeding places for *Aedes* species were discarded containers 27.1% (559/2064), unused bowls 16.2% (334/2064), plant axils 11.7% (242/2064), water storing barrels 11.4% (236/2064) and coconut shells 5.4%(111/2064). Most productive container types for larvae were tyres (44.3%), plant axils (37.6%), ceramic jars (36.6%), discarded containers (29.5%) and fish tanks (25.0%). Most productive container types for pupae were discarded containers (13.4%), fish tanks (10.4%), unused bowls (8.38%), ceramic jars (7.31%) and coconut shells (6.3%). *Aedes albopictus* (larvae-85.3%, pupae-80.4%) was the most predominant vector in the district. Earthen pots, plant axils, discarded containers and buckets were the main sources for *Aedes albopictus* while tyres, barrels, tanks and bowls were for *Aedes aegypti*. Further, mixed breeding was observed in water storage containers and tyres.

Conclusion: Discarded small bowls/containers were the key containers with the highest pupal index. Natural breeding habitats such plant axils may also significantly contribute to pupal production. Therefore an integrated control effort to include community level awareness programmes, improved solid waste management for small containers and